

10/507319 507 319

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
18 September 2003 (18.09.2003)

PCT

(10) International Publication Number  
**WO 03/075733 A1**

(51) International Patent Classification<sup>7</sup>: **A47L 9/22**,  
5/38, 5/28, 5/22

(21) International Application Number: PCT/CA03/00382

(22) International Filing Date: 12 March 2003 (12.03.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/363,351 12 March 2002 (12.03.2002) US

(71) Applicant (for all designated States except US): **CUBE INVESTMENTS LIMITED** [CA/CA]; 420 Industrial Parkway South, Aurora, Ontario L4G 3V7 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CUNNINGHAM**,

**James, Vern** [CA/CA]; 62 Haskell Crescent, Aurora, Ontario M4P 1V2 (CA). **POUPORE, Timothy** [CA/CA]; 95 Broadway St., Toronto, Ontario M4P 1V2 (CA). **SYVERSON, Charles, D.** [US/US]; 2007 Roe Crest Drive North, Mankato, MN 56001 (US).

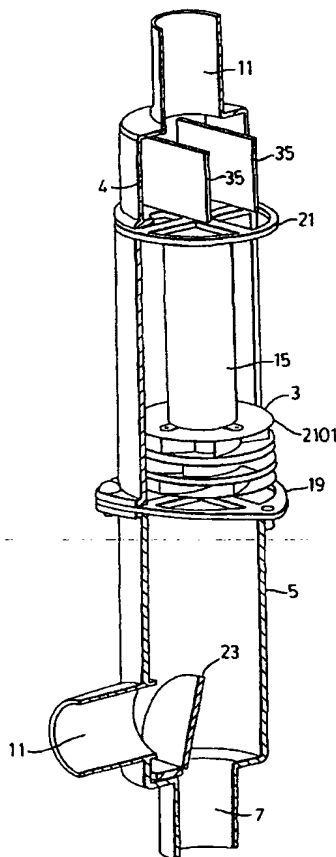
(74) Agent: **WILKES, Robert, H.**; 72 Albany Ave., Toronto, Ontario M5R 3C3 (CA).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: SUCTION MOTOR FOR VACUUM CLEANER



(57) Abstract: A cleaner (1) has a DC brushless motor (15) with stator (203) and rotor (212). Stator is mounted on a shaft and rotor is mounted inside and to a tubular body (207) about stator (203). Impeller (17) is mounted to and outside tubular body (207). The motor (15) and impeller (17) are mounted in a housing having an intake (17) and an exhaust (9). Operation of the motor and rotation of the impeller causes a partial vacuum at the intake (7) to draw air. The air is exhausted through the exhaust (9). A filter (61) prevents particles from entering the motor (15). Particles are collected in a receptacle (5) prior to the filter (61). The impeller (17) may be a squirrel cage fan, bladed fan, or centrifugal fan. A secondary exhaust (11) expels particles from the filter (61) and/or receptacle (5) by rotation of the impeller (17) in an opposite direction or by the use of a secondary DC motor and impeller. The housing (2) can fit in a cavity between conventional wall studs.

WO 03/075733 A1